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ABSTRACT

Evidence suggests that the changes which have taken place in the educational background of the work force may have important implications for how organizations should be managed and for their effectiveness. More formal education may cause people to have different expectations and preferences with respect to work. This may lead to more upward job mobility both within and between organizations. In order to be more effective organizations will have to move to more organic and participative management styles. Three ways in which organizational design and management style can affect organizational effectiveness are individual performance motivation; existence of organizational communication, coordination, and control mechanisms that allow the performance of individuals to come together in ways that produce an effective organization; and individual performance capability. All three of these conditions are needed in order for an effective high involvement system to develop. Although little research evidence exists on the effectiveness of high involvement work systems, some positive assessments have appeared. Ultimately, the participative management paradigm may be adopted not because of proof that it produces superior results but because of its suitability for the work force and work organizations. (One table and six figures are appended.) (YLB)

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Revised Version

Education, Management Style, and Organizational Effectiveness

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The American work force has changed dramatically in the last ten years. The focus here is on one particular change, the nature of the educational background of the work force and its relationship to organizations effectiveness and management style. Surprisingly little is known about the actual impact of education levels on the behavior of individuals and work organizations. Perhaps more surprisingly little empirical evidence also exists on the relationship between management style and organizational effectiveness. Thus, much of this paper must be speculative in nature. Nonetheless, there is enough evidence to suggest that the changes which have taken place in the education level of the society may have important implications for how organizations should be managed and for their effectiveness. But before discussing the relationship between education, management style, and organizational effectiveness, brief mention needs to be made of the type of changes that have taken place and are taking place in the area of education and consideration needs to be given to the impact of these changes.

EDUCATION IN THE UNITED STATES

Literally thousands of statistics could be quoted to make the point that today's work force is much better educated than its predecessors and that the nature of the education is also different (see, e.g., Freeman 1976). Let us briefly look at these two points separately. To quote just one of many Labor Department statistics, as of March 1981 about 40% of the work force aged 25 to 64 had completed a year or more of college, while as recently as 1970 the proportion of such workers who had some college education was 23%. Thus, the percentage of the work force with one year or more of college increased by 17% in just ten years. Although we may not see this same rate of growth in the current

decade, there is every reason to believe an increasing percentage of the U.S. work force will have attended college at the end of the 1980s. Indeed, some estimates suggest that it may exceed 50% (O'Toole, 1977).

A few other statistics also highlight what is happening in the area of education. There has been an increase in the availability of tuition assistance programs for workers. In 1964, 47% of the blue-collar workers were offered tuition assistance programs; by 1979, the figure was 79%. In the same period, the number for white-collar workers moved from 70% to 91%. In short, many employers are offering education benefits and as a result more and more people have the opportunity to continue their educations.

As impressive as they are, it is possible that the statistics relevant to workers' level of formal education understate the educational changes which are taking place in the work force. There has been a tremendous growth in the number of company educational programs and in the number of business seminars available. The Association for Higher Education bulletin suggests that in 1981 the number of business seminars offered, not including university and company programs, was 40,000. The American Management Association alone offers 3200 course sections a year and draws over 100,000 attendees. AT&T alone is estimated to spend over $70,000,000 a year on training programs.

Not only are people spending more years in school, there is considerable evidence of a change in what people are studying in high schools and colleges. Specifically, there seems to be a dramatic shift toward studying business related topics. Growth in MBA programs and people obtaining MBA degrees has been astronomical. Indeed, it is only in the last 20 years that business schools have been turning out large

numbers of MBAs. Interestingly, large numbers of these business school graduates are probably just now arriving in top-level management positions. For example, one survey of 971 executives showed 49% of those under 40 hold an MBA while only 16% of those 50 to 59 hold an MBA (O'Toole, 1977). But this change may be just the tip of the iceberg, as a recent study by Yankelovich, Skelly and White (1981) indicates there has been a substantial growth in the teaching of economics in high schools in grades 6 through 12. Twelve years ago only 24% of high school students took a course in economics. Today half of the schools require that all students take economics prior to graduating from high school and two-thirds of the teachers studied report that economics is available even at the 6th and 7th grades.

The overall picture then is one of a work force that has much more formal education than it had ten years ago and a work force that has been exposed to much more course content that appears to be relevant to work and business. Although, as many have argued, years of formal education does not bear a direct relationship to amount learned, it is important to consider what effects this dramatic change in amount and content of education are likely to be. This raises a key question: What do we know about the effects of formal education on people's attitudes toward and behavior at work? Such questions as, are workers with more years of formal education more productive? More satisfied? have been the subject of some research and considerable speculation.

IMPACT OF EDUCATION

Figure 1 summarizes some of the impacts that education in general and business education in particular have been hypothesized to have on people. There is evidence to support most of the relationships shown,

in this figure and, indeed, they fit with common expectations about the impact of education. Notably missing from the figure, however, is any indication that education leads to better productivity, greater organizational effectiveness or greater employee satisfaction. Indeed the research on the effects of the amount of formal education does not show a clear relationship between job satisfaction and education level (Wright and Hamilton, 1979).

The evidence which exists on the relationship between the education level of the individual employees and their productivity indicates no strong relationship between these two (Wright and Hamilton, 1979). A word of caution is in order here. The research on the relationship between education level and productivity at the individual employee level is highly questionable since it is generally limited to self report survey data. Self reports of individual performance are well known to be questionable as measures of performance. A different approach to this issue has been taken by labor economists who have studied it from a human capital perspective (see e.g., paper by Jorgenson and earlier work by Becker, 1975, Schultz 1961, and others). Overall, there is little reason to expect a direct relationship between education level and performance in most situations. Indeed it is reasonable to expect one only where the job requires specialized skills, the people are motivated to perform the work and the education consisted of job relevant skills (Lawler, 1973).

With respect to job satisfaction it has often been hypothesized that all things being equal there will be a negative relationship between job satisfaction and education level (e.g. Westley and Westley, 1971; Mills, 1951). This is supposed to come about because of a

hypothesized relationship between expectations about reward and education level. In short higher education leads to higher expectations which in turn leads to dissatisfaction unless the higher rewards are actually realized. Recent survey data do not support the hypothesized direct relationship between education level and job satisfaction (Sheppard and Herrick, 1972; Wright and Hamilton, 1979). At first glance this is surprising but it may be at least partially explained by the fact that more highly educated people often do get more rewards and thus their expectations may be met (even though they are higher) as well as are the expectations of the less well educated.

Interestingly survey data do tend to support the view that higher-educated workers are more concerned about having a say in work place decisions, having more interesting work and having a chance to develop their skills and abilities (see for example Lawler, Renwick and Bullock, 1977; Wright and Hamilton, 1979). In addition there is evidence that they tend to be much more optimistic about their chances for upward mobility. For example, one study found that in a sample of white collar employees 80% of those with a low education level said they never expected to work at a higher level while 42% of those with a high education level said this (Wright and Hamilton, 1979). This evidence seems to support the view that in most organizations more highly educated people both expect more and get more, thus they typically are not more dissatisfied. On the other hand if they were not treated more favorable then they might be more dissatisfied.

There is little evidence on whether education level is related to absenteeism and turnover. Given the lack of relationship between satisfaction and educational level there is little reason to expect a

strong relationship here. Numerous research studies have shown that, while not clearly related to job performance, satisfaction is related to absenteeism and turnover (Lawler, 1973; Mobley, 1982). On the other hand there is the evidence mentioned earlier which suggests that more highly educated people do expect and intend to change jobs more often. Since their education probably qualifies them for more jobs it is reasonable to expect that at the very least they are likely to be more upwardly mobile.

In summary what evidence there is suggests that education may cause people to have different expectations and preferences with respect to work. This does not necessarily lead to either higher job performance or higher job dissatisfaction; however, it may lead to more upward job mobility both within and between organizations.

MANAGEMENT STYLE AND ORGANIZATIONAL EFFECTIVENESS

Here management style is defined to include the decision making structure in the organization, the type of job designs, reward systems, and communication and control processes that are used by the organization. Management style in turn is assumed to affect organizational effectiveness. Indeed, much of the literature on management is concerned with designing or developing the right management style for particular organizations, industries, technologies, etc.

The early literature on organization design and management style focused heavily on identifying the right approach (see Galbraith, 1977 for a review). Indeed the early classical theories seemed to assume a strong direct connection between an organizations approach to organizing and managing and its effectiveness. Principles of management were developed and taught. However, little or no empirical research was done

to validate the principles and as a result the principles had to be accepted on faith.

Large scale empirical research on the relationship of organization design to organizational effectiveness began with studies by Woodward, (1958), Burns and Stalker (1961) and Lawrence and Lorsch (1967). In all three of these studies data were gathered on the relationship between organization design and organization effectiveness. All three studies found significant relationships but all three found that no one organization structure was always the most effective. They found that the nature of the environment in which the organization operated and the nature of the technology they used determined the relative effectiveness of different approaches to designing and managing organizations.

With respect to the environment the evidence indicated that if the environment is highly dynamic and turbulent, the hierarchical, bureaucratically structured organization is less effective. On the other hand the bureaucratic organization was shown to be quite effective in stable environments. Later studies have tended to confirm these earlier findings and it is now generally accepted that environments have a strong effect on the operating results of organizations (see e.g., Aldrich, 1979).

Technology seems to be important because of its impact on the predictability of the work and the interdependence of the different parts of the organizations. Certain technologies do not require a great deal of coordination and have highly predictable work, while others require just the opposite. As a general rule it is high level, more complex technologies which have unpredictable work and require a great deal of coordination. In any case the research evidence suggests that

the key to organization effectiveness is finding that approach to management which best fits the type of demands which a particular technology places on the organization (Porter, Lawler and Hackman, 1975).

Surprisingly missing in the empirical literature are reports of studies where organizations have changed their management styles (see Cummings and Malloy, 1977, for a review on some studies). As will be discussed further at a later point this is an important gap in the research because it makes it particularly difficult to draw causal conclusions about the relationship between management style and organizational effectiveness.

In summary, the research evidence suggest that management style is related to organizational effectiveness but that the relationship is not a simple consistent one as originally thought by some. It does suggest that whatever approach is taken must fit the environment and the nature of the task which the organization has to perform. Although these conclusions seem logical a word of caution is in order. They are based on very few studies and indeed there are often significant disagreements among researchers concerning what constitutes organizational effectiveness. In addition most studies have looked at manufacturing organizations, little work has been done in the service sector.

MANAGEMENT STYLE AND EDUCATION

Our earlier review of the effects of education on peoples attitudes and preferences concerning work suggests that educational level may affect the degree to which a particular management style is effective. It may also affect the degree to which a organization can operate effectively in particular work environments and with particular

technologies. More complex technologies usually require people with well developed skills. These people in turn can be expected to have desires for interesting work, influence and personal development. Thus, it is likely that organizations which use complex technologies need organization designs that attract and retain highly educated people. Similarly situations where the environment is turbulent may require a highly educated work force. This would be true because they require rapid decentralized decision making and this in turn requires that knowledgeable decision makers be spread throughout the organization.

As shown in Figure 2, perhaps the best conceptualization of the issues discussed here is to view environmental and technology factors as moderating the relationship between management style and organization effectiveness. The chosen management style in turn needs to be congruent with the education level of the work force because different management styles require different skills and satisfy different needs (Likert, 1961; Katz and Kahn, 1978).

The implication of this kind of thinking is that as characteristics of the work force, notably the education level, change, the effectiveness of a particular management style may change. Indeed, the effectiveness of certain management styles may decrease as education level rises (O'Toole, 1977). As a result, increased education level may lower organizational effectiveness, rather than increase it. This leads to the important point: that any prediction of the impact of educational level on organizational effectiveness needs to take into account the type of management style which is used in the organization as well as the appropriateness of the style for the organizations technology and environment.

We can further develop the point about the relationship between management style and education by looking at the potential effects of placing highly educated employees in traditionally managed work organizations. Traditional bureaucratic approaches to designing work organizations make a number of assumptions about where power should rest in the organization and the type of performance capability that can be expected from people at different levels in the organization. Grossly simplifying these assumptions: they are that most decision making and power should rest at the higher levels in the organization (see e.g., MacGregor 1960). It is the incumbents in these jobs who are expected to control, organize, and manage the work of others. The result of this kind of thinking is that lower level jobs often end up having low discretionary content, low skill demands, and carefully prescribed work activities. This type of thinking about organization design fits well with a work force that has only a few members who are educated enough to carry out difficult tasks, make important business decisions, and manage their own work activities.

But how does this fit with a society which has an increasingly higher educational level? Not very well if increased education level increases people's desire for control, influence, and skill utilization. It can be reasonably argued that raising education and at the same time maintaining a traditional approach to work design and management can be quite counterproductive (O'Toole 1977). It will be counterproductive because people who are not be able to use their skills and fulfill their needs on the job tend to be dissatisfied. As a result of this dissatisfaction, turnover and absenteeism may increase, and they may engage in such counterproductive behavior as sabotage in order to utilize their

skills and competences (Hackman and Oldham, 1980; Lawler, 1973). All of these, of course, can harm organizational effectiveness.

Ironically, our analysis so far suggests that some organizations which sponsor training programs, tuition assistance programs, and other programs which encourage employees to add skills and knowledge may be contributing to their own ineffectiveness in one respect. That is, they are contributing to the development of a work force that is partially unsuited to doing the kinds of jobs that organizations offer. Evidence of this happening is provided by a recent survey in which 30% of the U.S. work force reported that their education is underutilized (Quinn and Staines, 1979).

The answer to this problem cannot be to turn back the clock and stop the education advances which are likely to occur in the next decade. Indeed given the increasingly turbulent environment in which most organizations operate and the fact that in the United States knowledge-work, and technology-based-work are increasing while repetitive assemble type work is decreasing, it seems quite likely that jobs in the 1980s and 1990s will require workers with greater skills. Thus, a strong case can be made for continuing to increase the education level of the work force. Indeed it may be that only if it continues to increase will firms doing high technology knowledge based work be able to operate in highly turbulent environments. This argument rests on the assumption that in order to be more effective more and more organizations will have to move to more organic and participative management styles which require decision making skills, self-management skills, and planning skills to be generally present in their work forces. They will have to do this because, as has been mentioned, this management style

fits the kind of work they do. If this doesn't happen, and the education level continues to increase and the country continues to move toward knowledge work, we can predict a number of problems will occur including poorer national economic performance and increasing levels of employee dissatisfaction.

CHANGING MANAGEMENT STYLE

There are numerous currently visible signs of organizations trying to adjust to the new environment in which they operate. Indeed, elsewhere I have argued that we may be on the verge of a significant paradigm shift with respect to how managers in the United States think about organizing and managing work (Mohrman and Lawler, 1981). A number of factors have contributed to the present receptivity to making a broad paradigm shift. Probably the most important of these are the current lack of productivity growth, the economic stagnation that is occurring in the United States, and the stiff foreign competition which is hitting many industries. These factors have shattered the belief that American organizations are particularly well managed and highly effective. Indeed a crisis of confidence in U.S. approaches to management seems to have developed, complete with thousands of managers going to Japan to learn about management.

Not surprisingly, most individuals who have speculated about the kinds of changes in management style that are needed in order to make it congruent with today's work force and environment have recommended more employee involvement in decision making, more interesting and challenging jobs, and greater employee control over their day-to-day work activities (see e.g., Hackman and Suttle, 1977). This approach is often called participative management, Quality of Work Life, or a host of other terms that describe a new more participative paradigm about how work organizations are managed. At the present time, the participative paradigm seems to offer a solution to the problem of the misfit between the nature of the work force and the nature of the way most organizations are managed. It argues that through a change in

management style, instead of being a negative, the increased education level in the society could turn out to be a positive that leads to more productive work organizations.

There is considerable evidence around at the present time that organizations are trying to develop approaches to management. To mention just a few:

- Quality circles have grown at a dramatic rate in the last two years. Hundreds of companies for the first time now have employees meeting in groups to solve productivity and quality problems. (Cole, 1980)
- Attitude surveys are increasingly being used by companies as a way to find out what employees want and to give them a chance to input to decisions.
- Many companies are experimenting with self-managing work teams and other job-enrichment approaches designed to give employees a chance to make more and more of the day-to-day decisions concerning their work. (Davis and Cherns, 1975)
- More and more people are being given a chance to decide for themselves what time they come to work, and indeed what fringe benefits they will receive through flex-time and flexible benefit programs. (Lawler, 1981)
- Joint union management committees are meeting in a number of companies to facilitate cooperative problem-solving between unions and management. (Lawler and Ozley, 1979)
- New plants are being built that minimize the distance between workers and managers. The plants involve employees in many decisions and are structured on the basis of work teams that make decisions about quality, production, and staffing. (Lawler, 1978, Walton, 1980)

These approaches all involve giving more power to control their own work lives to lower level employees. Experimentation with them and other participative techniques may have been partially caused by what is being taught in business schools. For the last 20 years, business schools have taught the advantages of participative management and, as noted earlier, the recipients of this education are now beginning to arrive in top-level positions in organizations.

The approaches listed above are not a fully developed paradigm for a participative work organization. Instead, they are specific practices that organizations are trying. It is also important to note here that there is little experimental evidence showing the effectiveness of moving from a traditional approach to management to a more participative one. Some well documented cases of successful changes do exist (see e.g., Marrow, Bowers and Seashore, 1967; Goodman, 1979; Lawler and Ledford, 1982) but systematic large scale research is missing. Thus, arguments favoring movement to participative management usually rely heavily on comparative studies such as those cited earlier and on logically linking societal change to work place change.

At this point it is impossible to say what all the characteristics of a participative organization should be for it to be congruent with the kinds of knowledge based work which is replacing traditional manufacturing work in our society. It is possible, however, to talk in a little more detail about some of the specific practices and design features that such an organization would have. It is important to discuss these because, as we will see, they lead to some interesting implications for the kind of education that people need in order to work in them. In some cases, for example, they suggest that the type of education that people are receiving today may not prepare them to perform successfully in more participative work organizations.

HIGH INVOLVEMENT WORK ORGANIZATIONS

Much of the early literature on participative management presents global utopian models of participative organizations. The early seminal writings of Argyris (1957), Likert (1961), and McGregor (1960), for example, talk about the many advantages of such things as Theory Y

management, System 4 management, enlarged jobs, and participative decision making. The normative models they present are lacking in some respects but they are, nevertheless, very important statements in a number of respects. They provide models against which organizations can be compared to determine how close they are to an ideal participative organization. They also help to define some details of just what a participative organization should look like. Finally, they provide a number of arguments favoring a widespread movement toward participative management; included among these is the importance of responding to the rising education level of the society (see e.g. Argyris, 1957).

The early normative writings are also notable for what they didn't say. They generally failed to provide significant guidance on what kinds of organization structures, reward systems, information systems, policies, and designs are congruent with participative management. The theories eloquently described the type of climate and employee/organization relationships that should exist. They talked of employees being highly involved, a climate of trust, open communication, and consensus or participatory decision making. Much less time was spent talking about what types of pay systems, selection practices, career tracks, training programs, organization structures, and information systems are needed to produce the desired climate and motivation.

These omissions are one reason why the implementation of many of these ideas was so limited in the 1960s and 1970s. On the other hand, they are hardly surprising given the ground breaking nature of the early writings and the lack of research knowledge at that time on such issues as organization change and systems theory. Indeed, it is remarkable

that some of the early writings are as complete as they are. In any case, the 1960s and 1970s have seen theory building and experimentation which has helped fill in the voids in the empirical and theoretical knowledge concerning participative management. As a result we are now in a much better position to comment on how to use partipation to create high involvement work systems in which people both know more and care more because the design, structure, and policies of the organization support participation. Here we will focus on these structures and policies with a particular emphasis on how these relate to the amount and kind of education that people need to perform in a high involvement work organization.

FEATURES OF HIGH INVOLVEMENT SYSTEMS

The research on organizational effectiveness and the discussions so far suggests three ways in which organization design and management style can affect organizational effectiveness (see e.g. Galbraith, 1977; Likert, 1961; Lawler, 1973; Campbell, Dunnette, Lawler and Weick, 1970). As Figure 3 shows, individual motivation, individual performance capability, and organizational communication/coordination all directly affect the operating effectiveness of an organization. These in turn can be affected by the way organizations are designed, structured, managed and staffed. If participative work structures are to be effective, they must impact favorably on these three factors and, indeed, if they are to be more effective than traditional ones, they must have a more favorable impact. A brief review of what design features seem to contribute to motivation, performance capability, and coordination will highlight the connection between management style and these determinants of performance. Although we will consider them separately, they are

very closely related; first, because some features contribute to more than one; and second, because, to be effective an organization needs to be high on all three.

Motivation for Organizational Performance

A great deal has been written about the determinants of individual performance motivation. The key feature of most theories concerned with motivation is the relationship between performance and rewards (see e.g., Vroom, 1964; Lawler, 1973). It is one thing, however, to specify that this is a key feature in creating motivation; it is another to specify how the perception of a close connection between performance and rewards can be produced. The problem becomes even more difficult when the concern is one of motivating people to maximize organizational performance rather than individual performance.

Most of the writing concerned with motivation in work organizations stresses how to increase individual performance. Implicit in this is the assumption that if individual performance increases, so will organizational performance. This is a generally valid but distinctly different perspective than one which focuses on how people can be directly motivated to increase organizational performance (Lawler, 1980). One of the intriguing things about high involvement systems is the idea that people might be motivated by them not to maximize individual performance, but to maximize organizational performance. If motivation theory is any guide to practice, then in order to have people motivated to maximize organizational performance, they need to see their individual rewards tied to organizational performance. This is a simple idea, but experience has shown that it is not easy to accomplish.

Figure 4 presents a model which details some of the design features which are hypothesized to lead to a high level of motivation for organizational performance. The model also specifies the psychological or mental states that are hypothesized to intervene between the organizational design features and the motivational determinants of organizational performance. It distinguishes between extrinsic and intrinsic rewards and the different psychological states which are necessary for both types of motivation to exist.

Briefly, it shows that extrinsic rewards will be seen to be tied to performance when people understand a pay system which actually rewards them for increases in organizational performance and when they have knowledge of organizational performance (Lawler, 1981). This part of the model is supported by a great deal of research on the impact of pay systems on organization behavior (Lawler, 1971).

It also specifies that intrinsic rewards will be tied to organizational performance when knowledge of organizational performance is present, when people feel responsible for organizational performance and when organizational performance is meaningful to them. This feature of the model is based on what has been learned about intrinsic motivation and its relationship to job design, a model that has been extensively researched and is supported by considerable evidence (Hackman and Lawler, 1971; Hackman and Oldham, 1980). It maintains that for intrinsic motivation to exist, individuals must value such outcomes as feelings of personal growth, experienced competence and the use of skills and abilities. Clearly not everyone values these, but they do seem to be valued more by highly educated individuals (see e.g. Wright and Hamilton, 1979). This suggests that as the education level rises

intrinsic motivation can become an increasingly significant contributor to productivity if organizations are designed properly.

A number of design features are shown as contributing to motivating psychological states. Let me briefly review the key ones. In terms of extrinsic rewards, the key feature is shown to be the existence of a gain-sharing system which is developed and managed along participative lines, and which ties extrinsic rewards to organizational performance (Lawler, 1981). The Scanlon plan is a well-known gain-sharing plan, it usually pays monthly bonuses to employees when cost reductions are achieved. This kind of system can produce a good understanding of how extrinsic rewards and performance are related and can increase people's knowledge of organizational performance because it typically has a reporting system built into it (see e.g. Moore and Ross, 1978).

A gain-sharing plan is one way to accomplish another key design feature, that of an open public information system about operating results. Clearly, if people are to relate to and feel good about organizational performance they have to know what it is, how it is measured, and receive regular information about operating results. In the absence of a gain-sharing plan, this feature can be created by regular meetings, labor-management committees, goal-setting structures, and other means.

A third design feature, economic education, also relates to people receiving meaningful feedback. Without it, people may not be able to relate to the kind of measures used to assess organizational performance. Thus, although they get the information, they are in no position to understand its meaning and to evaluate performance based upon it. Economic education for this purpose needs to include the basics of cost

accounting, and it needs to focus on specific information about how the organization measures itself. In other words, it needs to be organization-specific, not general, macro-economic education.

Along with economic education, egalitarian perquisites, the existence of a lean flat organization structure, various participative structures (such as works councils), and finally, self-managing teams, are hypothesized to lead people to feel responsible for organizational performance. These design features all are expected to contribute to a felt sense of responsibility for organizational performance because they create conditions where the individual can actually influence the direction an organization takes, the choices that it makes, and the kind of strategies and tactics it employs. The model suggests that only if these design features are in place will individuals throughout the organization feel that they have some responsibility for the performance of the organization. Finally, only if they feel this will they be motivated to increase organizational effectiveness.

Several of these features need to be briefly elaborated upon. Egalitarian perquisites, for example, are not as crucial as some of the others, but they do have a symbolic importance. When highly differentiated perquisites are in place in an organization, they tend to distinguish between those who are important decision makers and those who are not. The message that is communicated to people who lack the key perquisites may be that they are not an important part of the organization and, therefore, not responsible for organizational performance. Of course, even with egalitarian perquisites, some people will be more influential than others, but this should be based more on expertise than on formal position. The view that power should be based more on

expertise is quite consistent with the reality of a more highly educated work force (O'Toole, 1977).

Self-managing teams can contribute strongly to a felt sense of responsibility for several reasons (Cummings and Malloy 1977; Goodman, 1979). First, through cross-training and job rotation mechanisms, they give people a chance to learn about many of the functions that are necessary in order for the organization to perform well. In addition, since they operate on a participative basis, they provide the individual a chance to influence many of the day-to-day work place decisions. This is essential, if the individual is to feel responsible for these decisions and for the success of the organization.

Participative structures, such as works councils and task forces, are, perhaps, less crucial, but nevertheless positive forces. They provide individuals a chance to influence different kinds of organizational decisions--those concerned with broad policy and major strategies (Miles, 1980).

Finally, lean structures are important because, with a lean structure, much of the planning, scheduling, and managing of work tends to gravitate towards the shop floor and away from management support or staff groups. When substantial staff groups exist, they do much of the thinking work. As a result, the production people feel little sense of responsibility for the operating results of the organization, because they are merely carrying out someone else's ideas (Galbraith, 1977).

Self-managing teams, along with goal-setting, clearly identifiable product input and output, and interface with the outside work environment, all help to make the performance of the organization meaningful to individuals. Self-managing teams do this because they contribute to the

understanding of what organizational performance consists of, the kinds of problems involved and the kinds of issues that are inherent in producing good performance. They also often allow individuals to influence the performance of many different parts of the organization because they allow people to rotate and do different jobs.

Goal-setting, when done effectively, can make organizational performance meaningful because it helps people recognize what good performance is and can produce a commitment on their part to high levels of performance (Locke and Latham, in press). Having clear inputs and outputs for a job or work area is crucial, because having them contribute to individuals being able to see a raw material turned into a clear product or service. Of course the clearer the output, the more an individual can understand what the organization is all about, and relate his or her own activities to that output. Finally, interface with the outside environment helps the individual understand what the consumer is looking for and how he or she utilizes the product or service offered. Also, in some cases, it can help the individual understand the input side of the input-out process. This interface can often be produced by having employee task forces visit suppliers or by other vehicles which highlight the input feature of the organization.

In summary, Figure 4 outlines a number of conditions which, when in place, are hypothesized to contribute to motivating individuals to increase organizational performance. An important point about these design features is that they are in many ways congruent with and complementary to each other. We will return to this issue later. It is important at this point to simply note that putting one or two of these features in place is probably not enough to create an overall sense of

motivation for organizational performance. Indeed, as is true with the work on individual job design, it is probably necessary for knowledge of performance, felt responsibility, and meaningful organizational performance to be in place in order for intrinsic motivation to exist. In short, the three psychological states that are outlined here as influencing intrinsic motivation are not so much summative in producing motivation as they are multiplicative, such that if any of them are missing it is unlikely that motivation for organizational performance will be present. In this case of extrinsic motivation, both knowledge of results and an understanding of the key performance relationship are needed for it to exist. Overall, knowledge of the relation of rewards to organizational performance is crucial, for without it, there can be neither extrinsic nor intrinsic motivation.

Determinants of Communication, Coordination, and Control

A necessary condition for organizational effectiveness is the existence of organizational communication, coordination, and control mechanisms that allow the performances of individuals to come together in ways that produce an effective organization (Galbraith, 1973, and many others make this point). As is so often stressed, good performance on the part of a number of individuals is not enough to assure good organizational performance. The performance of individuals must come together in a synergistic manner.

Communication, coordination, and control can be influenced by a number of structural mechanisms. Figure 5 highlights some of those which are particularly congruent with a participative management style. It also shows that if they are to be effective, they need to influence the motivation for coordination, communication, and control and to

provide the structures to allow for them. Specifically, the figure suggests that when intrinsic rewards are tied to organizational performance and when gain-sharing exists, motivation for coordination will be high. As was pointed out in Figure 4, a number of conditions need to exist in order for intrinsic and extrinsic rewards to be tied to organizational performance.

Mechanisms that are hypothesized to be useful for communication, coordination, and self-control include a number which have already been mentioned as contributing to motivation: gain-sharing, open informations systems, self- managing teams, and cross-training (Lawrence and Lorsch, 1967). These all contribute to the former because they encourage people to learn and understand what is going on in other parts of the organization, and they provide individuals with information about how other parts of the organization and the total organization operate (Galbraith, 1973). The figure also shows that team-based information systems are needed. Teams need information on their performance for self-management and interface with other teams. Finally it allows them to respond quickly to a rapidly changing environment.

Overall, Figure 5 shows different coordination vehicles than those traditionally used in organizations (Galbraith, 1973). Traditional organizations try to accomplish the goals of communication and coordination through a management hierarchy (Lawler and Rhode, 1976). They also structure tasks in such a way that the coordination is handled by an individual carrying out the task in the prescribed manner (Hackman and Oldham, 1980). In addition, communication is handled through formal, often secret information, systems that allow people at the top

of an organization to manage many of the coordination and control issues.

In summary, Figure 5 emphasizes that both motivation and mechanisms for communication, coordination, and self-control need to be in place for them to exist in an organization. In turn, motivation and the mechanisms are likely to come into existence only if a whole pattern or congruent set of design features are built into an organization. Figure 5 mentions just some of these features, and should not be taken as an exhaustive list. Nevertheless, they are illustrative of the design features which can facilitate coordination, communication, and self-control.

Performance Capability

High involvement systems, by their very nature, require greater individual performance capability on the part of employees than do traditional systems. This comes about because the design features in these systems call for individuals to influence decisions, exercise a broader range of skills on the job and, indeed, interact with people in groups and other settings which are not part of traditional organizational activities. It is precisely because of this factor that the approach fits a highly educated work force. This point, however, is sometimes overlooked by the creators of high involvement work organizations as the erroneous assumption is made that social skills are more important than technical skills (Nieva, Perkins, and Lawler, 1978). Participation is no substitute for technical competence, indeed, pooled technical ignorance may result in worse decisions than individual ignorance (Janis, 1973). Similarly in the absence of participative skills technical competence can be wasted.

Figure 6 outlines some of the organizational design features which are expected to increase individual performance capabilities. It also shows that a key for having high individual performance capabilities is having preemployment skills, learning opportunities, and, finally, motivation for skill building. In short, it hypothesizes that the performance capabilities of an individual are a function of the degree to which people are motivated to build their skills, the learning opportunities they are provided with, and the skills with which they enter the work place. Multiple design features can influence the degree to which motivation, learning opportunities, and preemployment skills are likely to be present.

Motivation for skill building is likely to be particularly high when three design features are incorporated into the organization. First, employment stability can help increase motivation because it assures individuals that if they build situation specific skills they will be around long enough to utilize them. In addition, it aids in retaining people with the necessary skills because it communicates to them that they need not be constantly on the job market for fear they might lose their job. This policy is also consistent with the view that when employees are well educated, the cost of replacing them is high so significant efforts should be made to reduce turnover (Likert, 1967).

A more direct influence on motivation for skill building is the use of skill-based pay systems. These systems pay people for the number of skills they have, not for the job they do at a particular time. There is, therefore, a direct connection between acquiring skills and higher pay (Lawler 1981). Finally, a good career planning system and open job posting can increase the motivation for skill building because they help

make it clear that there is an opportunity to move up in the organization if a person has the necessary skills (Hall, 1976). Thus, they help establish a clear connection between extrinsic rewards and skill acquisition.

Career planning and job posting systems can also help provide good learning opportunities for individuals. They can, for example, help people be aware of the availability of jobs that can aid their further development and can also help them see formal training opportunities, both inside and outside of the organization, that can aid their personal development.

The type of cross-training that is typically built into self-managing teams can provide a key learning opportunity for individuals in participative systems. This is the best way for individuals to broadly understand how the operating area in which they work functions. Other learning opportunities also need to be provided for individuals. These include opportunities for training in the technical skills that are necessary in order to do the job, and should also include group skills and economic education.

The figure highlights economic education and group skills training because these are so often overlooked in traditional work organizations. This may be appropriate in traditional organizations, since there is little need for individuals to exercise group skills and economic education is not particularly useful since individuals do not see the data and make the kind of decisions that directly affect it. Quite the opposite is true in high involvement systems. In order to understand feedback, and participate in decision-making and operate in work groups,

people need economic education and interpersonal process skills (Argyris 1962).

On the surface this need for economic education seems to fit well with the fact mentioned earlier that economic education is increasingly being done in grades 6-12. However, this fit may not be as good as it seems on the surface since the education which is being done tends to focus on public policy issues and on consumer economics. What is needed in high involvement work organizations is knowledge of business economics, that is information about costs, sales, profits, markets, and regulations. At least, at the present time, most employees do not come to the work place with this kind of knowledge (Is it any wonder they often are not concerned about profits and other economic results?).

Because high involvement work organizations are often built around work teams, interpersonal and group skills are particularly important. With the exception of a few business school and social science students, most people are not exposed to this type of training prior to starting work. Thus, it is usually necessary for organizations to invest heavily in this type of education for both team members and managers. The need is particularly severe in the case of managers because the interpersonal skills they need (e.g., group facilitation, counseling, participative goal setting) are not ones that are usually taught in traditional management training programs.

Finally, the selection and recruiting process can be an important determinant of the kind of preemployment skills with which individuals enter the organization (Dunnette, 1966). Given the increasing education level in the society, it may be possible for organizations to find individuals who already have the needed technical and organizational

skills. This can be a much cheaper way to acquire the skills than relying on training, particularly since high involvement organizations require higher skill levels.

Participative selection, that is, allowing potential peers to influence the selection decision, seems to be a viable approach to selection since it gives the members of work teams an opportunity to assess whether the skills that the applicant brings are ones that the team needs to have. It also may aid entry by creating a commitment on the part of the existing employees to seeing that the new hire is successful. To this extent, this process indirectly influences the kind of learning opportunities that are available to the new hire. In addition, in high involvement systems, it seems to be particularly appropriate to give individuals a realistic job preview (Wanous, 1980). This helps assure that people who are interested in this type of work situation will be attracted and those who are not will have the opportunity to select themselves out.

In summary, Figure 6 shows that there are a number of organizational design features which can contribute to a high level of the kind of performance capability that is supportive of a high involvement management system. Again, as is true with the conditions which lead to a high level of motivation, many of these practices are complementary, or congruent, with each other. It is also important to emphasize here that these are not practices which are likely to be effective if asked to stand alone. Simply providing employment stability or skill-based pay so that people will be motivated is not likely to be enough to produce high levels of individual capability. What is needed is the combination of good preemployment skills, good learning opportunities,

and a high level of motivation. In turn, it takes a number of appropriate organizational design features to produce motivation, learning opportunities, and preemployment skills. The absence of only a few of these may assure poor performance capabilities.

It is ironic, given the rising education level in society, that high involvement organizations need to place such a strong emphasis on learning. This occurs because the kind of education they receive often does not to give them the skills they need to be effective in these organizations. What it does apparently do is give them a desire for interesting work and the opportunity to grow and develop.

Congruence of Design Features

Throughout our discussion of the different design features which contribute to effective high involvement systems, two points have been stressed: that congruent design features need to be selected, and that many of the design features we have discussed are not stand-alone features. That is, they become positive influences only when they are combined with other design features such that a total pattern exists which contributes to a desirable organizational condition. We can make this point clearer by looking back at Figure 3. None of the three conditions which we specified there as leading to organizational effectiveness are likely to be effective if the others are not present. Motivation without capability is unlikely to lead to good organizational effectiveness, just as capability without communication and motivation, is unlikely to lead to effectiveness. In short, all three of these conditions are needed in order for an effective high involvement system to develop or, indeed, for any effective organizational system to exist.

Motivation, capability, and communication in turn are not produced by a single design feature. As Figures 4, 5, and 6 illustrate, it takes a rather complex set of interrelated conditions for them to be produced. Perhaps the best way to summarize this point is to specify a congruent set of design features which are likely, in totality, to describe an organization as an effective high involvement system.

Table 1 lists a set of design features which are predicted to characterize an effective high involvement work organization. It is drawn from our earlier figures and requires little additional explanation. It adds a few design features which were not emphasized in earlier figures, but is basically identical to those. For example, it stresses a reward system that is open, skill-based, includes flexible fringe benefits, and has minimum distinctions between people based on their horizontal level in the organization. It also stresses a physical layout that is congruent with team structures (e.g. team meeting rooms and work areas) and is egalitarian in nature. Finally, as we stressed in the earlier figures, training is given quite a high prominence and includes nontraditional training in economics and interpersonal skills.

It is important to note that in many respects the design features listed in Table 1 are congruent with each other and are mutually reinforcing. They all send a message to people in the organization which says that they are important, respected, valued, capable of growing, and trusted, and that their understanding of, and involvement in, the total organization is desirable and expected.

The list of design features in Table 1 should be viewed as an ideal or blue-sky list of design features. It is not one that is characteristic of any existing organization to the best of my knowledge,

nevertheless, I believe it is one which can be put into effect. Although the features listed in Table 1 are blue-sky, they are not completely untested and untried in today's work environment. Indeed, there exist some examples of organizations which incorporate many if not all of these features. In my experience, the organizations that come closest to incorporating all of these features are the hundred or more high involvement new plants which have sprung up around the United States during the last ten years (Walton 1980). As I have noted elsewhere, they contain a number of innovative features and, interestingly, seem to be proliferating at a rapid rate in the United States (Lawler, 1978). In line with our earlier comments these new plants typically involve interdependent and relatively complex technologies. These features are also built into many of the more mature gain-sharing companies in the United States (Lawler 1981). Finally, as Ouchi and Jaeger (1978) have pointed out, there are some very successful U.S. corporations which incorporate quite a few of the practices (e.g., IBM). They, however, do not go as far as the new plants do in incorporating all of these design features.

In summary, it is possible to specify, in some detail, a fairly extensive list of design features which are likely to be congruent with each other and supportive of an effective high involvement management system. Indeed, the argument, so far, has been that they are necessary preconditions to having a successful system. Although some are blue-sky and theoretical in nature, it is possible to cite examples where some of them are being tried. The question, of course, arises as to how successful they have been.

Effectiveness of High Involvement Systems

Unfortunately little research evidence exist on the effectiveness of high involvement work systems. Evidence exists of the effects of some of the individuals practices which make them up but the overall approach has not been tested. Thus the relationships shown in Figure 4, 5, 6 must be treated as hypotheses, not facts.

There are a number of reasons why research is lacking in this area. Perhaps the most important one is the relative newness of many of the ideas. They simply have not been tried and thus opportunities for assessment research haven't existed. In addition some companies are not open to research in this area. For example Procter and Gamble, a leading adopter of high involvement practices, not only doesn't allow research, they deny using the practices. Reportedly they feel they have a competitive advantage which they do not wish to share with their competitors. Finally, there are the issues of what is organizational effectiveness and the problems of comparing the effectiveness of different organizations (Lawler, Nadler, and Cammann, 1981). It often turns out to be difficult to determine which organizations are the most effective and it is usually impossible to definitely say why one is more effective than another. The primary reason for this is that organization effectiveness is a multidimensional concept and, as has been stressed throughout this paper the causes of it are also multidimensional. Thus even when agreement can be obtained that one organization is more effective than another it is often impossible to get agreement that this has anything to do with management style.

It is important and reasonable to note that although there is a general lack of research some positive assessments have appeared, and

there is a certain consistency to the findings (see, e.g., Hackman and Suttle, 1977; Davis and Cherns, 1975; Walton, 1980). In general, participative systems seem to be characterized by low turnover, low tardiness, low absenteeism, low material and supply costs, low labor costs, and high product quality. In many ways, this is not a surprising pattern of positive results. When these systems are operating effectively, they are designed to have people more involved in and more informed about a variety of organizational decisions. This leads to people being more committed to the system, hence lower turnover, lower tardiness, and lower absenteeism. It also leads to their caring more about effectiveness and to their knowing more, hence lower material, supply, and labor costs. The finding of higher quality seems to be relatively similar to the finding with respect to job design (Hackman and Oldham, 1980). Here, the data show that when individuals feel responsibility for a task, they are motivated to improve the quality since they, personally, feel identified with the product and do not wish to be associated with a low quality product.

Certainly, not all existing high involvement systems which include many of the design features we have identified here have produced all of the favorable results which we have enumerated. Indeed, at this point, it would be premature to say these systems are always more effective than traditional ones. Technological and environmental conditions may sharply limit the effectiveness of high involvement work systems.

As might be expected from our earlier discussion about technology and environment, certain situational factors can be identified which seem to favor creating organizations with high involvement management systems. Briefly, interdependent technologies, knowledge based work,

situations where rapid responses to frequent changes are needed, situations where product quality or service quality is a key determinant of operating effectiveness, and situations that involve new start-ups seem to be ones that favor high involvement systems. The reasons for this seem to follow rather directly from the design features that were listed earlier.

Knowledge based work attracts individuals with higher education levels and, thus, there often are strong expectations and values which support a participative style of management. Interdependent technologies create conditions where there is a substantial performance advantage to having good communication, coordination, and control mechanisms in an organization. Since this is something that high involvement systems usually handle quite well, it gives them a competitive advantage over traditional organizations. Similarly, since the motivational climate produced by high involvement systems seems to be particularly favorable to getting high quality products, when this is a key results area for an organization, they do rather well.

Finally, new start-ups provide the opportunity to put a complete design in place at once, and thus create an internally congruent system from the beginning. Hence, this is a particularly favorable circumstance for high involvement systems and, as a result, new plants seem to enjoy a much higher success rate with participative management than do efforts which involve changing traditional systems to participative ones. When change from a traditional to a high involvement one is attempted, substantial problems involving the scheduling of different changes, and interface congruence between traditional and new systems always develop. It becomes hard, for example, to know where to begin

change, how rapidly to move different design features to a more participative mode, and finally, to eventually get most of the design features.

Adoption of High Involvement Model

Interestingly, the ultimate widespread adoption of the participative management paradigm may not depend on "proof" that it produces superior results. As Kuhn (1970) characterizes periods of paradigm shift, or attempted paradigm shift, it amounts to competition between the two alternatives (e.g., participative management vs. bureaucratic). The competition involves social and political processes, rather than "scientific" or rational ones. On the surface, the competition compares the rival paradigms in terms of their ability to lead to understanding. It is a process of selecting the most viable, for verifying one while falsifying the other. At a deeper level, however, the rivals are by definition incommensurate. They define the world and its problems in completely different ways. Each attempts to validate itself and invalidate the other on its own terms, which the other can neither accept nor allow since to do so would be to accept its underlying paradigm. The battle cannot be resolved by proofs. This incommensurability also means that there are no such things as incremental or transitional shifts; the shift when, and if, it occurs must be all at once, a complete gestalt switch.

If paradigms do not compete rationally through proofs, then there must be other processes used for deciding the competition. Kuhn (1970:151) suggests one in this quote from Max Planck: ". . . a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and

a new generation grows up that is familiar with it." Actually, Kuhn sees the competitive process as social and political as well as biological. Death can be social and political also.

This scenario from Kuhn can be made concrete with examples from participative management. Examples can be found on both the academic and practitioner sides of the paradigm. Nehrbass (1979), for instance, berated those academics who espouse participative approaches for allowing themselves to be blinded by their humanist values and ignoring the research that, he claimed, fails to substantiate their claims. Sometimes, the same data points, e.g., the General Foods plant at Topeka, have been used as supporting evidence for both paradigms. This new plant has been described both as a failure and as evidence that high involvement plants are more effective. Depending on one's point of view, Volvo's Kalmar plant can be seen as more effective, less effective, only as effective, or just as effective as other approaches to car manufacturing.

Examples can be found regarding the degree of diffusion of high involvement work organizations also. Lawler (1978) sees a snowballing trend, while others (e.g., Cole, 1980) see no evidence for making such a claim. These examples show how incommensurability precludes the possibility of deciding the competition with evidence. In this regard, it is interesting to note that in situations where different paradigms are well accepted (e.g., Japan and Sweden), few feel compelled to validate the paradigm they have chosen.

Finally, because the competitive process is a political process that may be generational in nature the educational trends in the U.S. may end up causing the competition to be decided in favor of the

participative paradigm. To an increasing degree it is the paradigm of the business school graduates of the last ten years. As was noted earlier, it also fits better the expectations of a well educated work force and it also fits better with the types of post industrial work organizations which are appearing in the U.S.

CONCLUSION

The relationship between education and organizational effectiveness emerges from our discussion as a very complex one. Clearly, the points made do not support the view that rising education levels will necessarily lead to higher organizational effectiveness. The prediction is that it will increase effectiveness only if the management style which is used utilizes the education and in turn fits the environment and technology.

Looking to the future, our analysis suggests that if a paradigm shift toward a more participative approach the management does occur it may lead to a need for different types of education. Participative systems seem to require certain kinds of education which are not usually provided. On the other hand, if a paradigm shift does not occur, it seems likely that more and more employees will report their education is underutilized. Perhaps, the best way to summarize is to conclude with the observation that education, management style, type of work, and organization effectiveness are interdependent at the societal level. The relationship is a complex one of mutual influence, not one that lends itself to looking at just the relationship between education and organizational effectiveness.

Table 1
Design Features for a High Involvement System

ORGANIZATIONAL STRUCTURE
- Flat
- Lean
- Mini Enterprise Oriented

JOB DESIGN
- Individually Enriched or
- Self Managing Teams

INFORMATION SYSTEM
- Open
- Inclusive
- Tied to Jobs
- Decentralized - Team Based
- Participatively Set Goals and Standards

CAREER SYSTEM
- Tracks and Counseling Available
- Open Job Posting

SELECTION
- Realistic Job Preview
- Team Based
- Potential and Process Skill Oriented

TRAINING
- Heavy Commitment
- Peer Training
- Economic Education
- Interpersonal Skills

REWARD SYSTEM
- Open
- Skill Based
- Gain Sharing or Ownership
- Flexible Benefits
- All Salary
- Egalitarian Perquisites

PERSONNEL POLICIES
- Stability of Employment
- Participatively Established Through Representative Group

PHYSICAL LAYOUT

Around Organizational Structure
Egalitarian
Safe and Pleasant

MANAGERIAL BEHAVIOR

Good Listening
Participative Leadership
Group Facilitation

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FIGURE 1

HYPOTHESIZED CONSEQUENCES OF EDUCATION

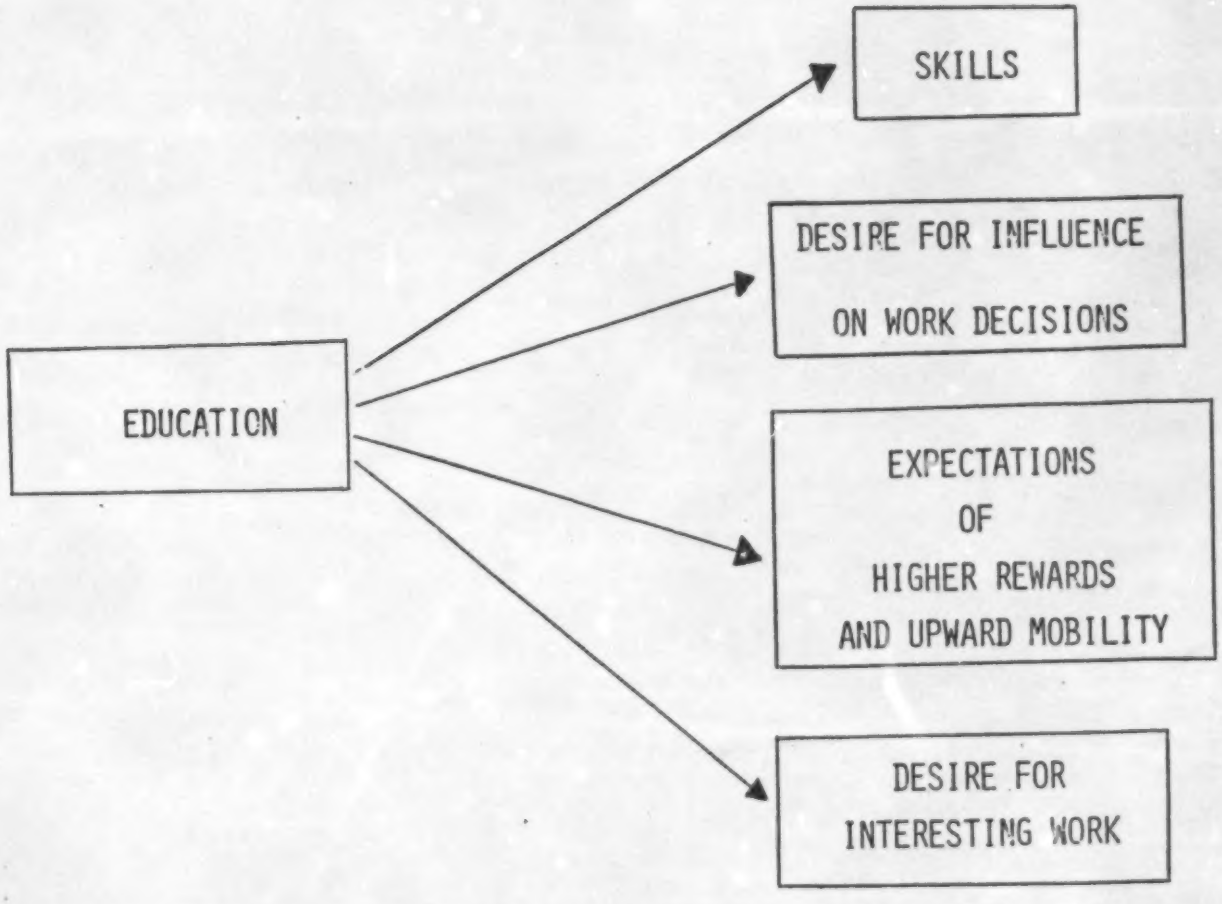


FIGURE 2

RELATIONSHIP OF MANAGEMENT STYLE
TO ORGANIZATIONAL EFFECTIVENESS

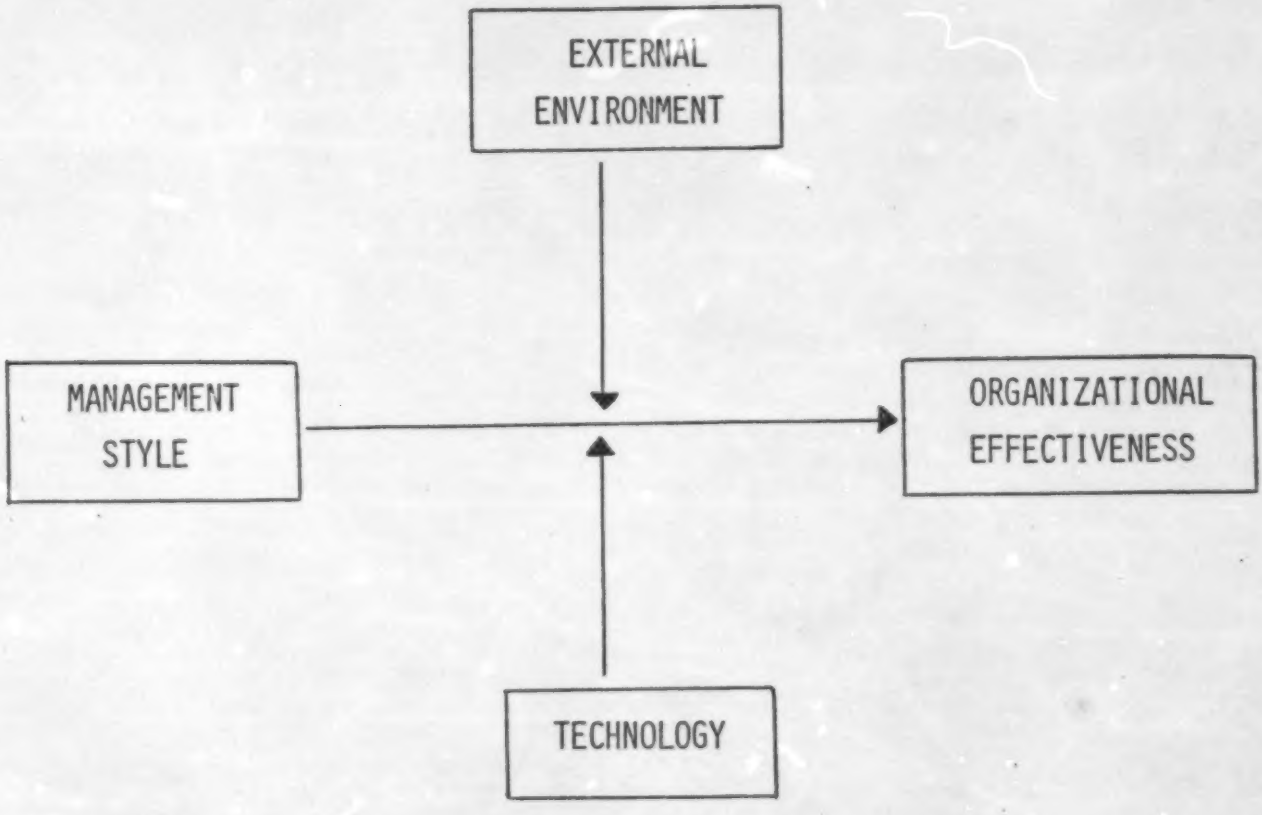
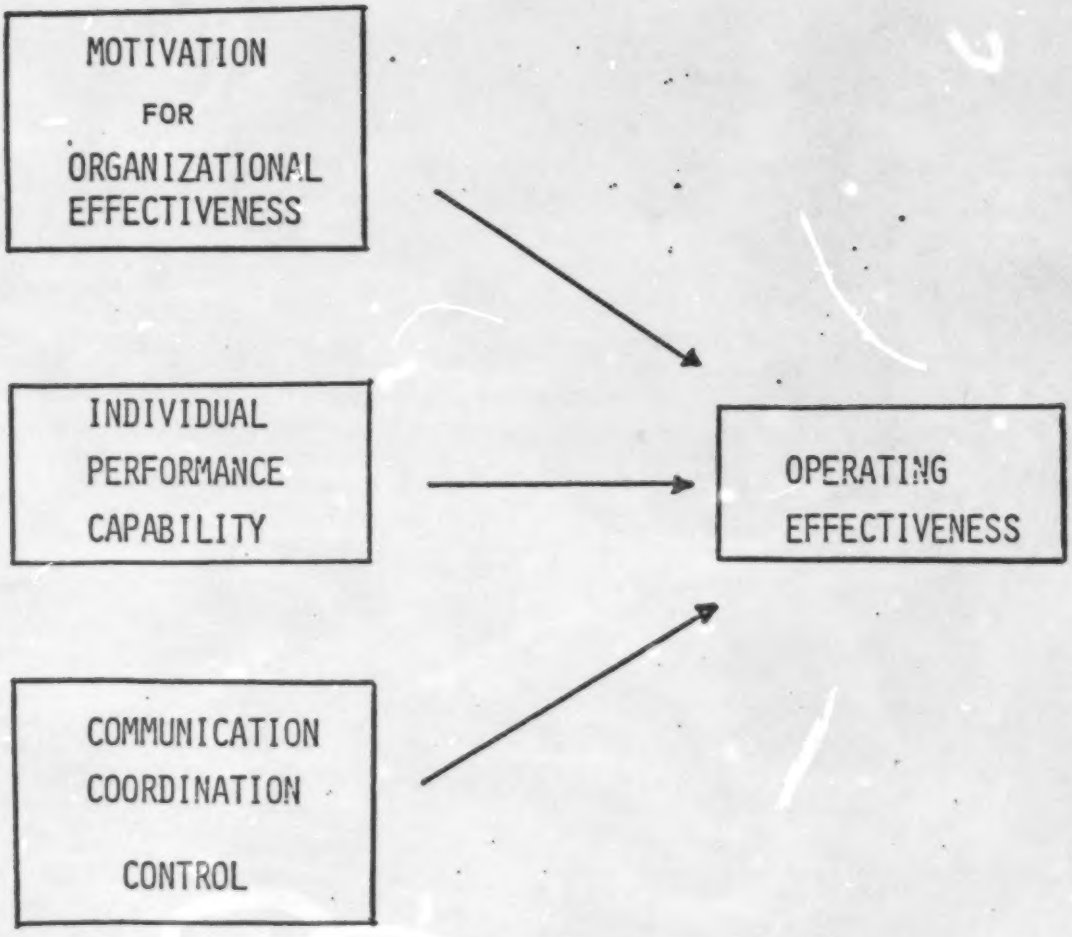


FIGURE 3

HUMAN SYSTEM
DETERMINANTS OF ORGANIZATIONAL
EFFECTIVENESS



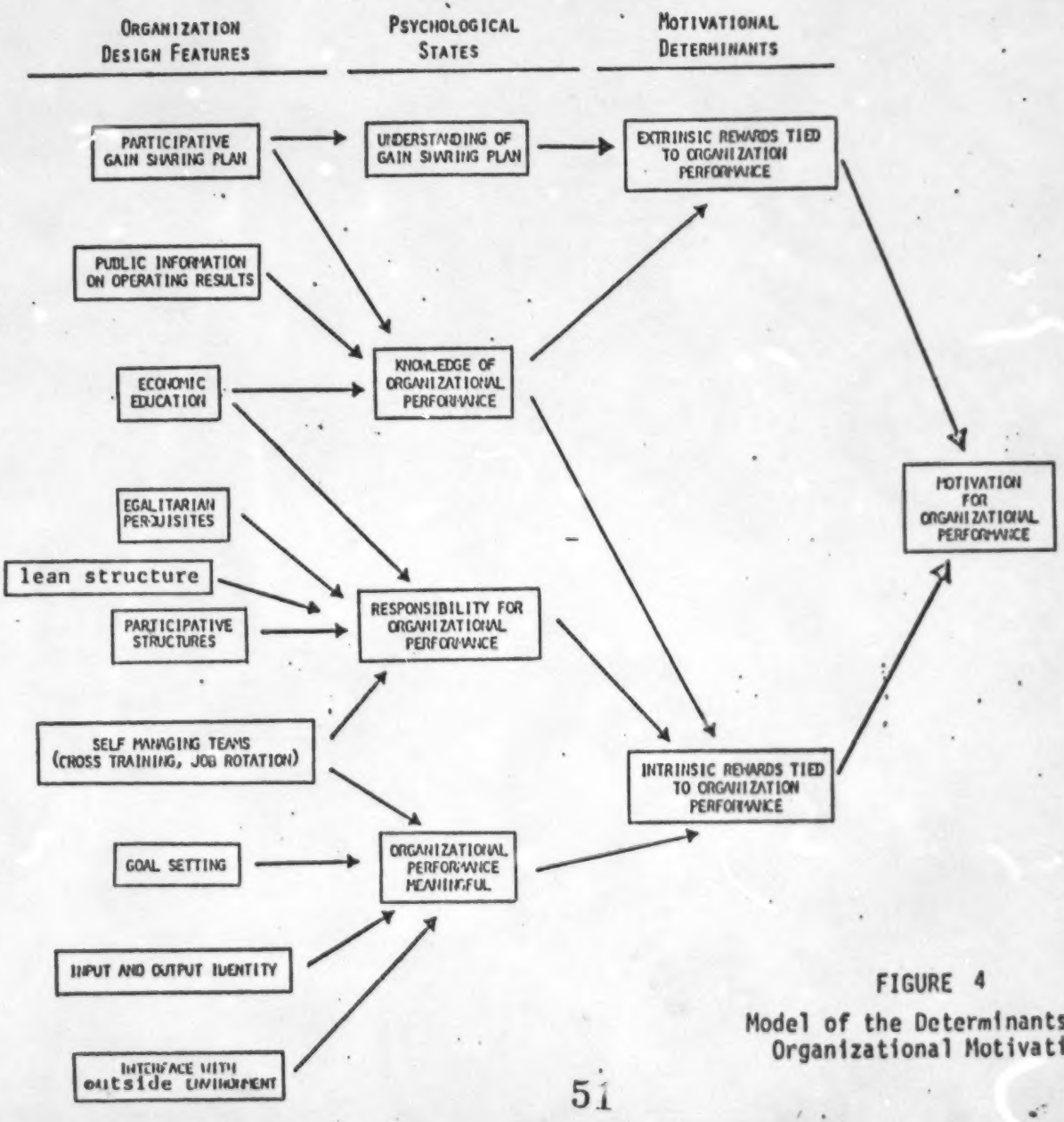


FIGURE 4

Model of the Determinants of Organizational Motivation

FIGURE 5

DETERMINANTS

OF COMMUNICATION AND COORDINATION

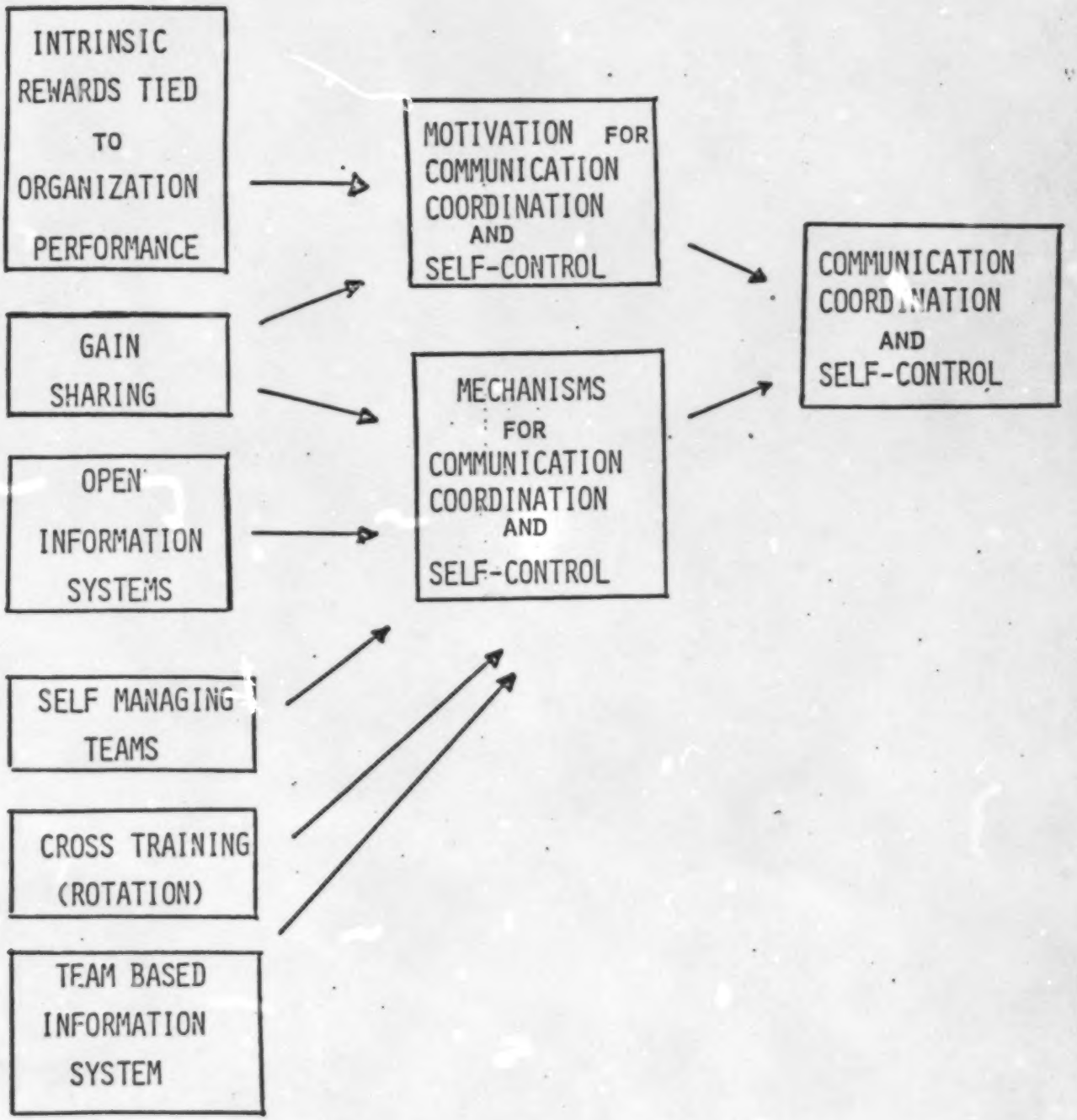

INTRINSIC REWARDS TIED TO ORGANIZATION PERFORMANCE
GAIN SHARING
OPEN INFORMATION SYSTEMS
SELF MANAGING TEAMS
CROSS TRAINING (ROTATION)
TEAM BASED INFORMATION SYSTEM
MOTIVATION FOR COMMUNICATION COORDINATION AND SELF-CONTROL
MECHANISMS FOR COMMUNICATION COORDINATION AND SELF-CONTROL
COMMUNICATION COORDINATION AND SELF-CONTROL

FIGURE 6
ORGANIZATIONAL
DETERMINANTS OF
PERFORMANCE CAPABILITY